# Job Loss Analysis

**ID No: 2000247** **Status:** **Original Date:** 20/May/2011
**Last Review Date:**

**Organization:**

**SBU:** GLOBAL MANUFACTURING
**BU:** ALL
**Work Type:** Technical (Process Engineering)
**Title (Work Activity):** Troubleshooting a Process Problem
**Site/Region:**

| Personal Protective Equipment (PPE) | Selected | Comments |
|---|---|---|
| Proper PPE per your Refinery Guidelines | | |
| Personal Gas Monitor | | |
| Additional Task Specific PPE | | |
| Other | | |
| | | |

**Reviewers**

| Reviewers Name | Position | Date Approved |
|---|---|---|
| Michelle Johansen | Process Engineerign Manager/Global JLA team leader | 11/30/11 |
| Allan Zieber | Salt Lake Process Leader | |
| Jim Zarbis | Sr Process Eng | |
| Ken Wohlgeschaffen | Sr Process Eng | |
| Mark Zaal | Sr Process Eng | |
| Patricia Roberts | Sr Process Eng | |
| Bart Welch | BIN Leader | |
| Kevin Preus | Lead Process Engineer | |
| Jon Peters | Lead Process Engineer | |

**Development Team**

| Development Team Member Name | Primary Contact | Position |
|---|---|---|
| Lee, John W (JLGZ) | Y | Process Engineer |
| Atwell, Audrey (ROAU) | | Lead Process Engineer |
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**Job Steps**

| No | Job Steps | Potential Hazard | Critical Actions |
|---|---|---|---|
| 1. | Review customer requirements | 1. Failure to follow through on action items, not notifying the right people<br>2. Off spec. product, damage or upsets in downstream units, downgrade of HVP, product giveaway, and curtailment of unit rates | 1. Verify and confirm when the customer needs the information<br>2a. Validate requirements vs. current plan (7-day or 21-day plan, etc)<br>2b. Communicate w/customer if discrepancy exists |
| 2. | Review process problem with operators | 1. Not involving the right people<br>2. Loss of time because not all the information about the situation collected<br>3. Gaps in procedures, training, or written communication could be missed | 1a. Ask operators if issue has happened before; what was done before;<br>1b. Ask operators if there were any changes noticed that would cause or be related to the issue<br>1c. Ask operators if there were any changes in process set points, equipment or routings<br>1d. Ask operators why (if any) changes were made<br>2a. Check turnovers to discover what other crews may have said<br>2b. Review CPV's and current sample results<br>3. Review COD (Consequence of Deviation) table and confirm any corrective actions taken |
| 3. | Review Electronic Operating Manual, PMO, PFDs and P&IDs for the system | 1. Loss of time because not all the information about the process problem collected | 1a. Ensure understanding on how the system is designed to work.<br>1b. Print out PFDs and P&IDs<br>1c. Identify indication points that can be trended in PI or taken locally<br>1d. Identify points where samples may need to be taken<br>1e. Review PMO and unit mass/energy balance for discrepancies<br>1f. If urgent, review with SME/BIN at beginning of investigation so that, if warranted, plans can be made for support or travel. |
| 4. | Field walk to verify piping and locations of indication points on P&ID | 1. Misunderstand actual system because PI&Ds and PFDs not accurate | 1a. Compare field equipment with P&IDs and drawings<br>1b. Confirm where indications are located (i.e. span of level indications, elevation of PI for dP calculations, upstream or downstream of control valves or bypasses)<br>1c. Update drawings if inaccuracies are found |
| 5. | Take field data | 1. Wrong conclusions from inaccurate indication<br>2. Design or normal data does not reflect current situation | 1a. Take field measurements that pertain to the issue (temperature, pressure, flow, level, distance, pipe size, IR scan)<br>1b. Identify differences with PI/DCS and have any suspect indications checked by operations or I&E<br>2. Develop sample plan with input from SME/BIN if necessary and coordinate |

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|---|---|---|---|
| | | | with QCD for any special test requirements, execute plan |
| 6. | Review: data collected, historic data, design | 1 Inability to understand the process problem and be able to communicate what is occurring. Data not available to share with SME<br>2. Indication leads to wrong conclusion<br>3. Loss of time because a similar incident has happened in the past | 1a. Identify when the issue began to occur<br>1b. Check control valve position vs. Flow/Pressure/Temperature<br>1c. Trend current situation and compare it to times where unit operated with similar feed composition, rate, and other pertinent process parameters<br>1d. Compare with design and simulations<br>2. Identify differences and have any suspect indications checked by operations or I&E<br>3. Check PED files and GDW to see if a similar event/issue has been documented in the past. |
| 7. | Consult with CST/Process Controls on Issue | 1. Control issue not identified<br>2. Calculation is incorrect due to failure of a variable<br>3. Data collection rate is insufficient to determine root cause of issue | 1. Ask if issue may be related to control of process<br>2. Review the calculation and check if inputs are in working order or if there is an issue that involves a calculated variable<br>3. Collect more data at higher resolution, if necessary |
| 8. | Consult with an appropriate SME | 1. Not involving the right people<br>2. Time lost because issues have happened in other locations and root cause/fix is previously understood | 1a. Share issue and information collected from review of system with previous PE and SME or BIN.<br>2a. Determine if there is a short-term and/or long term fix for the situation<br>2b. Find out if issue has been observed in other locations<br>2c. Ask if there are any additional items that need to be reviewed to help troubleshoot issue<br>2d. Look for JLA's on troubleshooting the specific issue. |
| 9. | Perform additional checks to confirm issue | 1. Issue identified is not really the problem | 1. Perform any additional tasks or testing that will independently confirm issue |
| 10. | Communicate findings | 1. Failure to follow through on action items and not notifying the right people<br>2. Loss of data and troubleshooting history, loss of time | 1a. Communicate findings with Customer<br>1b. Share process recommendations to resolve the issue and how to mitigate risk until situation can be resolved<br>2. Store pertinent information within archived documents (GDW,GMKM) |
| 11. | Complex trouble-shooting | 1. Time lost due to the process problem being more appropriate for a team to address<br>2. Time lost due to unorganized approach to process problem solving | 1. Bring together a team to brain-storm all potential causes<br>2. Identify route cause(s) through the process of elimination using a systematic approach |